

SLIDER CURVATURE MODIFICATION BY SUBSTRATE MELTING EFFECT

PRODUCED WITH A PULSED LASER BEAM

ABSTRACT OF THE INVENTION

5

A method and apparatus for producing very high crown and camber curvature in slider materials using a laser processing system which produces fluence which is variable in a controllable manner, by applying a laser beam to the flex side of the slider material and varying the fluence of the laser beam to optimize the curvature in the slider material. The fluence is variable by finely controlling the power output of the laser or by changing the spot size of the laser beam. The beam spot size can be changed by using a focusing lens to establish a focal plane and then varying the relative positions of the slider relative and the focal plane.

An apparatus for producing high crown and camber is also disclosed, as well as a slider produced by the process of applying a laser beam to the flex side of the slider material and varying the fluence of the laser beam to optimize the curvature in the slider material.

SLIDER CURVATURE MODIFICATION BY SUBSTRATE MELTING EFFECT

PRODUCED WITH A PULSED LASER BEAM

Inventor: CHANG, Ping Wei, et. al.

Atty. ref.: IBM1P005, IBM ref.: SJ00000019US1

THIS CORRESPONDENCE CHART IS FOR EASE OF UNDERSTANDING AND INFORMATIONAL PURPOSES ONLY, AND WILL NOT BE SUBMITTED AS A PART OF THE FORMAL PATENT APPLICATION.

10 laser system
12 pulsed laser
14 laser beam
15 expanded laser beam
16 movable mirror
18 mirror stage
19 adjustable beam expander
20 lens
22 lens stage
24 substrate
26 slider flex side
28 slider
30 slider stage
32 computer controller
34 focal plane
36 crown
38 row of sliders
40 leading edge
42 trailing edge
44 horizontal scribed lines
46 initial crown
48 final crown
50 vertical scribed lines
52 initial camber
54 final camber